

Doc Code: M865 or FAILREQ.INTV

PTOL-413A (10-09)  
Approved for use through 07/31/2012. OMB 0851-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE**Applicant Initiated Interview Request Form**

Application No.: 10/596,057 First Named Applicant: Sandrine Dulac et al.  
 Examiner: Devang R. Patel Art Unit: 1793 Status of Application: Final Rejection

**Tentative Participants:**

(1) Greg Schlenz, Reg. 55,597 (2) Joseph Berghammer, Reg. 46,057  
 (3) Marc Santarini (4) Sylvain Henry (inventor)

Proposed Date of Interview: February 4, 2010, Proposed Time: 10:00 EST (AM/PM)

**Type of Interview Requested:**

(1) ☒ Telephonic (2) ☐ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☐ YES ☒ NO

If yes, provide brief description: \_\_\_\_\_

**Issues To Be Discussed**

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>112</u>	<u>1 and 14</u>	<u>N/A</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) <u>103</u>	<u>1, 14, 19, 20</u>	<u>Miller &amp; Dockus</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☒ Continuation Sheet Attached

☒ Proposed Amendment or Arguments Attached

**Brief Description of Arguments to be Presented:**

Applicant intends to present proposed amendments for overcoming the 112 rejections.

Applicant also argues that the combination of Miller and Dockus as proposed by the Examiner does not yield the claimed invention, and proposes possible claim amendments.

**An interview was conducted on the above-identified application on \_\_\_\_\_.**

**NOTE:** This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

/Gregory G. Schlenz, Reg. No. 55,597/

Applicant/Applicant's Representative Signature

Gregory G. Schlenz

Typed/Printed Name of Applicant or Representative

55,597

Registration Number, if applicable

Examiner/SPE Signature

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

**Continuation Sheet for Form 413A (with proposed claim amendments)**

Examiner Devang Patel (ph: 571-270-3636, fax: 571-370-4636)

Serial No. 10/596,057

Final Office Action Mailed 11/13/2009

Docket No. 007035.00013

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Dear Examiner Patel,

Below is a summary of our arguments and proposed claim amendments for responding to the Office Action mailed November 13, 2009. If you should have any questions or comments prior to the Interview, please contact me at 312-463-5443.

Best regards,

Greg Schlenz

**Rejections Under 35 U.S.C. § 112**

To overcome the rejections under 35 U.S.C. § 112, we propose the following amendments. The Examiner noted (at P. 4 of the Action) that the original specification provides support for coating to form a single layer. Accordingly, Applicant believes that this wording should be acceptable.

1. (Currently Amended) Process for assembly of aluminum alloy plates comprising fluxless brazing under controlled nitrogen and/or argon atmosphere at a temperature of between 580°C and 620°C, and rapid cooling, and in which at least one of the plates consists essentially of:

(a) a core alloy with composition (% by weight):

Si 0.3-1.0; Fe<1.0; Cu 0.3-1.0; Mn 0.3-2.0; Mg 0.3-3.0; Zn<6.0; Ti<0.1;  
Zr<0.3; Cr<0.3; Ni<2.0; Co<2.0; Bi<0.5; Y<0.5; other elements <0.05  
each and <0.15 total, remainder aluminum, and

(b) an aluminum brazing alloy coated as a single layer ~~coating~~ on at least one face of the core alloy, the aluminum brazing alloy including 4% to 15% of silicon and 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal.

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14. (Currently Amended) A process for brazing aluminum alloy plates comprising:

(a) coating one or more plates with a single layer ~~coating~~ consisting of a cladding alloy comprising between 4% to 15% by weight silicon and 0.01% to 0.5% by weight of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal;

(b) subjecting the one or more plates to fluxless brazing under controlled nitrogen and/or argon atmosphere at a temperature of between 580°C and 620°C, and

(c) rapidly cooling the plates,

at least one of the plates including a core alloy comprising between 0.3% and 1.0% by weight silicon, between 0.3% and 3.0% by weight magnesium, between 0.3% and 2.0% by weight manganese, and between 0.3% and 1.0% by weight copper.

**Rejections Under 35 U.S.C. § 103**

Applicant has included a summary of its arguments regarding the rejections under § 103:

**Generally**

- The cited references deal with three types of brazing:
  - Nocolok brazing - with flux and under controlled atmosphere (Miller)
  - Fluxless vacuum brazing (Miller)
  - Fluxless controlled atmosphere with braze promoting layer (Dockus)
- No reference discloses fluxless controlled atmosphere brazing without a braze promoting layer.

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Miller Does Not Disclose the Claimed Invention

- Miller is directed toward a sheet/alloy for Nocolok or vacuum brazing, and not for fluxless brazing in a controlled atmosphere.
- Miller does not disclose at least:
  - The use of fluxless controlled atmosphere brazing.
  - The use of alloying additions of Bi, Pb, etc. to the clad layer.
- A brazing sheet according to Miller was tested for fluxless controlled atmosphere brazing, and was found to be completely unsuitable, as stated below. Please note that this sample was tested on a prior occasion, and was not made or tested for purposes of responding to the present Office Action:

	Si	Fe	Cu	Mn	Mg	Ti	Bi
<b>Core</b>	0.50	0.16	0.50	1.67	0.53	0.09	-
<b>Clad</b>	11.9	0.29	-	-	-	-	-

- These compositions meet embodiments of Miller for the core alloy and the clad alloy. The core alloy meets the composition in Col. 3-4 of Miller, except for the Mn, which is slightly above the higher limit but plays no role as far as brazeability is concerned. The clad alloy meets the composition in Col. 4, Lns. 44-56 of Miller.
- The thickness of the clad layer was 10%, obtained by hot co-rolling with the core alloy plate. Sheets were cold-rolled to a final thickness of 0.40 mm and partially annealed to obtain an H24-temper.
- Brazeability was assessed in the same way described in our patent application and this sheet was found to be completely unsuitable for fluxless controlled atmosphere brazing. Our rating for the brazeability was "E", which according to [0026] of our specification, means that no brazing joint at all was formed.

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Dockus Does Not Disclose the Claimed Invention

- Dockus does not disclose at least:
  - Fluxless controlled atmosphere brazing without an additional braze-promoting layer.
  - The core alloy used in the claimed invention.
- Dockus is clear that the braze promoting layer is an essential element of the disclosed sheet for use in fluxless controlled atmosphere brazing.
  - The Examiner states that Dockus teaches that Pb and Bi are known in the prior art as useful braze modifiers (P. 14 of the Action). However, Dockus does not say that Pb or Bi additions will make the alloy suitable for fluxless controlled atmosphere brazing. Instead, Dockus teaches the use of an additional Ni-based layer for fluxless controlled atmosphere brazing.
  - Note that the prior patents cited by Dockus (US 3,970,237 and 4,028,200) also disclose the use of brazing sheets with additional layers of nickel-lead, cobalt-lead, etc. (called "bond-promoting metals").
  - Thus, Dockus teaches that the disclosed cladding layer is only suitable for fluxless controlled atmosphere brazing with the braze-promoting layer.
- Dockus would discourage one skilled in the art from performing fluxless controlled atmosphere brazing without a braze-promoting layer.
- Inventor Sylvain Henry has tested a sample with a composition and structure that meets one embodiment of Dockus, without the braze-promoting layer. Like the previous sample, this sample was tested on a prior occasion, and was not made or tested for purposes of responding to the present Office Action. The compositions of the core and clad alloys tested were the following:

	Si	Fe	Cu	Mn	Mg	Ti	Bi
<b>Core</b>	0.16	0.15	0.64	1.33	-	0.08	-
<b>Clad</b>	11.6	0.31	-	-	-	-	0.15

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- These compositions meet one embodiment of Dockus. The core alloy belongs to the AA-3000 series, in agreement with Dockus [0093], and the clad alloy meets the conditions detailed in Dockus [0098].
- The thickness of the clad layer was 10.5% (in agreement with Dockus [0114]), obtained by hot co-rolling with the core alloy plate. The sheets were cold-rolled to a final thickness of 0.25 mm and partially annealed to obtain an H24-temper.
- Brazeability was assessed in the same way described in our patent application. This sheet was found to be unsuitable for fluxless controlled atmosphere brazing (also rated "E").

Combination of References

- The combination of the teachings of Miller and Dockus does not yield the claimed invention:
  - Miller is not suitable for fluxless controlled atmosphere brazing.
  - Dockus teaches fluxless controlled atmosphere brazing only in connection with a Ni/Co braze promoting layer.
  - **Thus, if Miller and Dockus were combined to create a sheet for fluxless controlled atmosphere brazing, the sheet would have an additional braze promoting layer.**
- The proposed combination by the Examiner, without the use of the braze-promoting layer, goes against the teachings of Dockus, and would not be expected to work by one skilled in the art.
- The claimed invention contains no braze promoting layer, and the claim language of at least claims 1, 14, 19 and 20 preclude the use of such a layer. Thus, the proposed combination cannot create a *prima facie* case of obviousness.
  - Applicant may consider adding an additional element to the claims (such as "containing no additional layers" or "wherein no other surface preparation is applied"), if the Examiner believes it would be beneficial.